

**PUBLIC OPEN HOUSE #1**  
**Western Waterfront Trail & Park Master Plan**  
November 15, 2016



# PROJECT OVERVIEW

A public planning process began in August 2016 to determine the future recreational uses of a mostly City-owned, 10-to-12-mile corridor along the St. Louis River between the Irving neighborhood and Jay Cooke State Park, in West Duluth. The study area includes an existing 3.3 mile long pedestrian trail, an historic rail bed, and five existing or planned river access points. A portion of the historic rail bed has been leased by the City of Duluth to the nonprofit Lake Superior and Mississippi Railroad for seasonal fee-based rail excursions.

## Overall Project Goals

The Master Plan's overall project goals include, but are not limited to:

- Increasing connectivity from adjacent neighborhoods to the St. Louis River and Estuary.
- Increasing recreational and development opportunities within and along the St. Louis River Corridor.
- Facilitating a stakeholder community engagement process to gain significant input on the future use of the area.
- Enhancing neighborhood quality of life.
- Restoring and protecting natural habitat along the trail corridor.
- Determine whether to retain and potentially improve the remaining riverfront rail line and renew the Lake Superior and Mississippi railroad's lease for excursion rail trips.

## Master Planning Process

With these project goals in mind, the master planning process will explore options to:

- Extend and improve the Western Waterfront Trail as cited in the 1979 WWFT Master Plan.
- Re-brand the Western Waterfront Trail as a heritage trail that celebrates and interprets the rich culture and natural heritage of the corridor.
- Develop potential new river access nodes opposite Tallas Island and at the area known as Slag Point.
- Develop potential new canoe/kayak water trail entry points at Munger Landing, Boy Scout Landing, and Perch Lake.
- Decide the future use of the City-owned riverfront.
- Create synergy between the Water Trail, the Western Waterfront Trail, and the excursion rail (if the City determines to extend the excursion rail lease).



# TONIGHT'S MEETING

## What is a Mini Master Plan?

- *Provides an inclusive public process* to determine the future use of the trail and park.
- *Engages stakeholders* to understand park/ trail usage patterns and needs.
- *Completes an inventory* of existing trail conditions.
- *Creates a clear "road map"* of how to move forward with development of the trail.
- *Offers clear direction to the City and community partners* on fund development, operations, and management of the park.

## Establishing Meeting Norms

- *Treat each other with respect*
- *Transparency: avoid hidden agendas*
- *Work to build consensus*
- *Share the floor*

## Format

- *50 minute presentation*
- *10 minutes for general questions*
- *30 minutes for concept overviews at stations (review maps up close and discuss with staff and consultants)*

## Opportunities for Input

- *Discussion at stations*
- *Comment cards*
- *Online survey for additional feedback*



# CITY OF DULUTH PROJECTS

## St. Louis River Corridor



# St. Louis River Corridor Project Timeline



### Trails

#### ■ Cross City Trail

2015/2016: Mini Master Planning  
I-25 to Zoo: under construction  
2017: Zoo to Knowlton Creek  
2018: Knowlton Creek to Spirit Mt. and Grand Avenue (pending funding)

#### ■ West DWP (Spirit Mt. to Becks Rd.) Multi-Use Trail

2018-2020: Construction (pending funding)

#### ■ Grand Avenue Nordic Center

2015/2016: Mini Master Planning  
2017: Construction of 3 km lighted trail with snowmaking (pending funding)

#### ■ Superior Hiking Trail Improvements

2015: Design of Ely's Peak, Spirit Mountain and Brewer Park loops

2016: Construction: Ely's Peak, Brewer Peak, Spirit Mountain

Design and construction: Enger Park and Bardon Peak

#### ■ Duluth Traverse Trail

2015/2016: Design and construction of Lincoln Park segment, 8 miles; Mission Creek Trail Hub, 3 miles; St. Louis River Trail, 2 miles; Piedmont Connector, 1 mile; Brewer Park to Spirit Mt. (funding secured)  
2018/2020: Spirit to Becks Rd.; Ely's Peak Loop

#### ■ Spirit all-weather mountain bike loop

2015/2016: Design  
2016-2017: Construction (pending funding)

#### ■ New Equestrian Trail

2015: ✓ Feasibility Study complete  
2016 Ely's Peak Loop design and construction  
2017/2018: Additional trail development

#### ■ Fairmont/Norton Park Snowmobile Trail Restoration

✓ Flood repairs complete

2016: Restoration of bridges

2016/2017: Additional work TBD

#### ■ ATV Trail

2015/2016: Feasibility study and DNR Public Review  
2016/2017: Construction (pending funding)

### River Restoration & Access

#### ■ National Water Trail

2015/2016: Mini Master Plan  
2016/2017: Implementation/construction (pending funding)

#### ■ Western Waterfront Trail Restoration and Extension

2015/2016: Planning and design of invasive removal and native replanting; trail surface restoration  
2017: Western Waterfront Extension construction; Riverside to Morgan Park (pending funding)

#### ■ Kingsbury Creek River Connector

2016-2018: Construction (pending funding)

#### ■ Kingsbury Bay Restoration

2016: Planning  
2017/2018: Construction

#### ■ Spirit Mountain River Connector

2017: Natural surface Knowlton Connector Trail (pending funding)

#### ■ Tallas Island Paddle Center

2016: Comprehensive Mini-Master Planning  
2016/2017: Construction and implementation (pending funding)

#### ■ Indian Point Campground

2016/2017: Mini-Master Plan  
2018-2019: Construction (pending funding)

### Grand Avenue Parks

#### ■ Lincoln Park

2015/2016: Mini-Master Plan  
2017-2018: Construction (pending funding)

#### ■ Wheeler Athletic Complex

✓ Mini-Master Plan complete  
2016-2018: Construction (pending funding)

#### ■ Memorial Park

2015/2016: Mini-Master Planning  
2016-2020: Construction (pending funding)

#### ■ Gary New Duluth Recreation Area

2015/2016: Construction of Phase I & II

### Other Projects

#### ■ Quarry Park

2015/2016: Mini-Master Planning  
2016/2017: Construction (pending funding)

#### ■ Wade Stadium

✓ Tuckpointing, gates and netting complete

#### ■ Spirit Mountain Water System

✓ Construction complete

#### ■ Fairmont Park/Zoo

2015/2016: Master Planning  
2016-2020: Construction

#### ■ DWP Roundhouse Site Restoration

✓ 2014: Land acquisition / Phase I invasive removal

✓ 2015: Phase II invasive removal and tree planting

2016: Final site restoration

#### ■ Park and Trail System Infrastructure Upgrades

2016: Planning  
2016/2017: Implementation of wayfinding, signage and barriers

#### ■ Chambers Grove Park

2015: ✓ Completion of DNR Shoreline Restoration

2015/2016: Design and construction of park flood restorations and improvements

#### ■ Neighborhood Parks

2015/2016: Mini-Master Planning for Piedmont, Harrison, Merritt, Grassy Point, Keene Creek, Norton, Smithville, Riverside, Blackmer, Fond du Lac, and Historical parks.

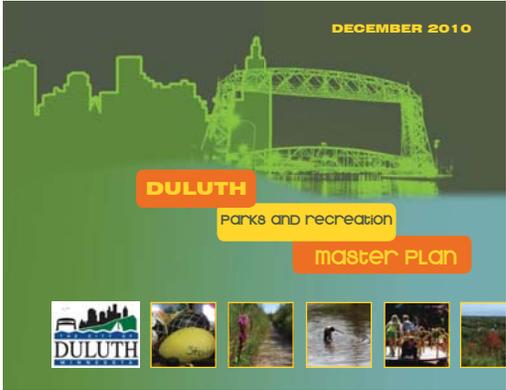
2016: Grant funds become available in June to qualifying parks

✓ = indicates a completed project / or phase

# PRIOR VISIONING



1979 Plan



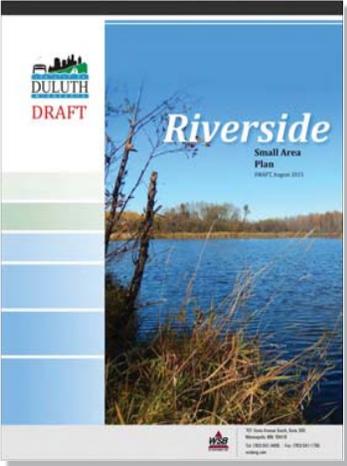
2010 Parks and Recreation Plan



2011 Bikes and Trailway Plan



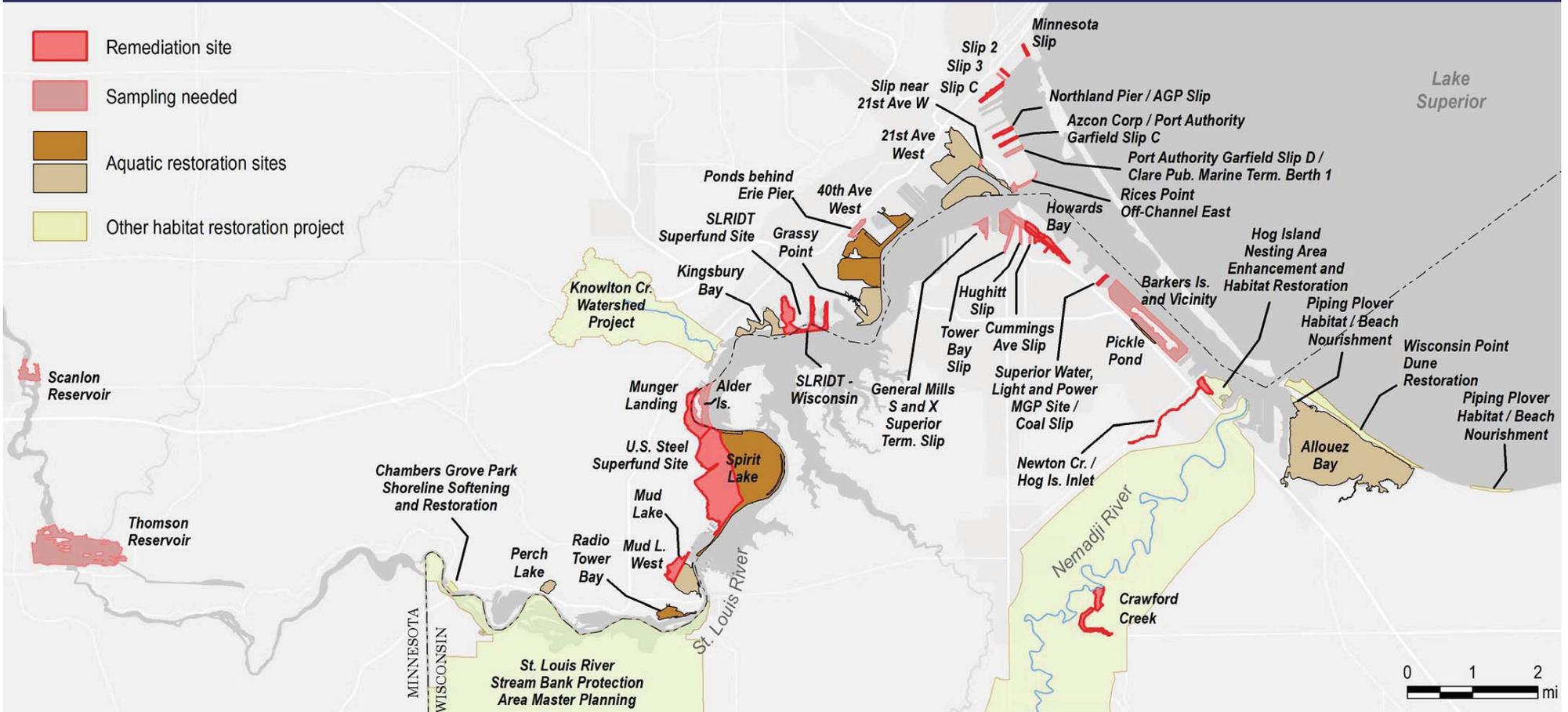
2012 Morgan Park Neighborhood Revitalization Plan



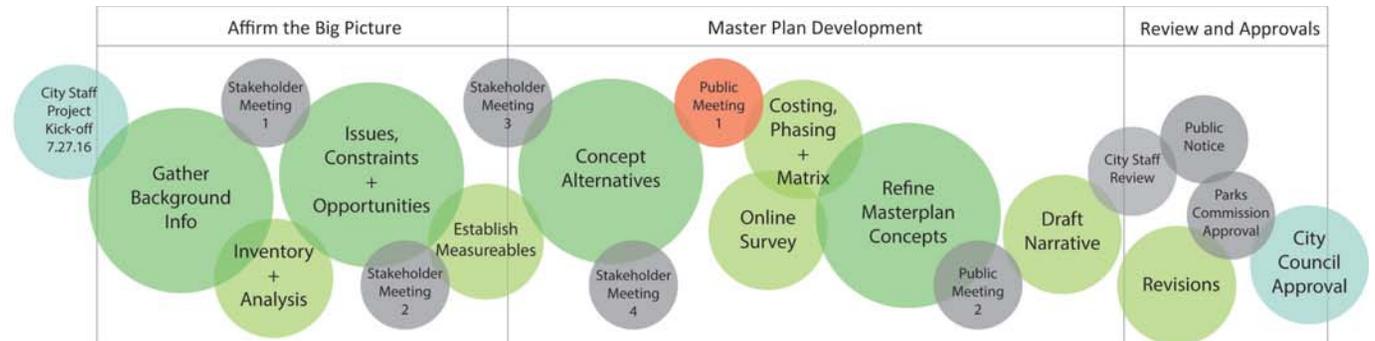
2015 Riverside Small Area Plan & 2013 Gary New-Duluth Small Area Plan

# RIVER RESTORATION & CONSERVATION ACTIVITIES MAP

## Remediation and Restoration Sites in the St. Louis River AOC



# SCHEDULE



Task	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
1 Project kick-off Gather Park + Trail Corridor background information	█					
2 Complete inventory and analysis Identify issues, constraints and opportunities Establish park + trail development measurables		█				
3 Develop preliminary concept alternatives interpretation and plans			█			
4 Develop costing, phasing plans and measurables matrix summary			█			
5 Refine masterplan concepts with preferred trail alignment and draft narrative				█		

## Meetings and Public Input

Stakeholder Groups (4)		● ●	● ●			
Public Meetings (2)			●	●		
Online Survey (4 weeks?)			●	● ●		
Public Notice (2 weeks)					●	
Parks and Recreation Commission Review						●
City Council						●

# STAKEHOLDER WORKSHOPS SUMMARY



## Summary

- Four 3-hour meetings occurred September —November
- Topics included:
  1. Planning for interpretation and branding implementation
  2. Riverfront green space
  3. St. Louis River access and put-in sites
  4. Trail extension and rail options

### • Goal of Stakeholder Workshops:

- Gather useful background information from various user groups
- Give input on Vision and Guiding Principles
- Provide input on community needs and wants
- Give feedback on concept design and alternatives
- Review public engagement materials

### • Stakeholder groups included representatives from:

- Regulation agencies
- Business owners
- Community/neighborhood leaders
- Elected officials/City staff
- Environmental and Recreation groups

## Stakeholder Attendees (39)

- Carole Newkumet, Riverside Community Club
- Andy Webb, Lake Superior and Mississippi Railroad
- Dwight Morrison, Wheels on Trails
- Dave Moore, Railway Solutions/LS&M
- Joel Manns, Lake Superior and Mississippi Railroad
- Dean Votgman, Parks and Rec Commission, District 5
- Mike Casey, Friends of West Duluth Parks and Trails
- Wayne Dupuis, Fond-du-Lac Band of Lake Superior Chippewa
- Jill Hoppe, Fond-du-Lac Band of Lake Superior Chippewa
- Jack Ezell, Western Lake Superior Sanitary District
- Daryl Peterson, Minnesota Land Trust
- Hansi Johnson, Minnesota Land Trust

- Rick Staffon, Izaak Walton League
- Denette Lynch, Friends of West Duluth Parks and Trails
- Charlie Staudahar, Spirit Lake Development
- Bill Majewski, Morgan Park Community Club - St. Louis River Alliance
- Amanda Crosby, Parks and Rec Commission - Disability Rep
- Alison J. Clarke, Friends of West Duluth Parks and Trails
- Harry Hanson, Friends of West Duluth Parks and Trails
- Virginia Olson, Friends of West Duluth Parks and Trails
- Joel Manus, Lake Superior and Mississippi Railroad
- Brad Massengill, Lake Superior and Mississippi Railroad
- Debbie Isabell-Nelson, Morgan Park Community Club

- Lisa Angelos, MnDNR - Jay Cooke State Park
- John Lindgren, MnDNR
- Erin Endsley, MN Pollution Control Agency
- Glenn Merrick, Izaak Walton League
- David Bolgrien, Environmental Pollution Control Agency
- Deb DeLuca, Duluth Seaway Port Authority
- Will Munger, Izaak Walton League
- Mike Bares, MN Pollution Control Agency
- Scott Cieniawski, Environmental Protection Agency
- Keith Okeson, Lake Superior Muskies
- Pat Okeson, Lake Superior Muskies
- Craig Sterle, Izaak Walton League

- Kevin Johnson, MnDNR - Parks and Trails - Two Harbors
- Charlie Nelson, Twin Ports Walleye Association
- Dave Nelson, Twin Ports Walleye Association
- Russ Francisco, Marine General

# GUIDING PRINCIPLES

## Goals and Objectives

*Western Waterfront Trail Vision (1979 to present): To create a multi-use recreational trail along the shoreline of the historic St. Louis River and Estuary from the Irving neighborhood up river to the Fond du La neighborhood in West Duluth. The lineal pathway system will provide a unique and safe experience for trail users of all abilities, and will also educate, honor, and celebrate our rich history along this great body of water. The trail corridor shall include quality site amenities, offer spectacular views and interpretation opportunities at key points of interest while also providing improved water access for picnicking, boating and fishing activities.*

### Community Connection

- Enhance sense of community by creating a lineal trail system that links the waterfront to adjacent residential neighborhoods, and provides transportation alternatives to nearby businesses, recreational destinations, and public green spaces. Provide a better connection to the larger network of trail systems throughout the City.

### Unique Duluth Experience

- Implement the natural and cultural history into the design of the trail. Educate on natural habitat, resource management, and local heritage. Ensure points of interest and viewsheds are preserved and enhanced.

### Equitable Experience

- Maximize accessibility for all people by ensuring trail is designed to ADA standards where feasible, minimize trail crossings and provide safe access points. Be respectful to immediate landowners and neighbors.



# GUIDING PRINCIPLES

## Goals and Objectives

### Technically & Environmentally Feasible

- Be mindful of technical and economic feasibility. Ensure trail design is realistic and can be maintained long term for community benefit.

### Environmentally Sustainable

- Minimize disruption to the natural terrain and sensitive environmental areas. Implement low impact development and sustainable best management practices to avoid degrading natural environment.

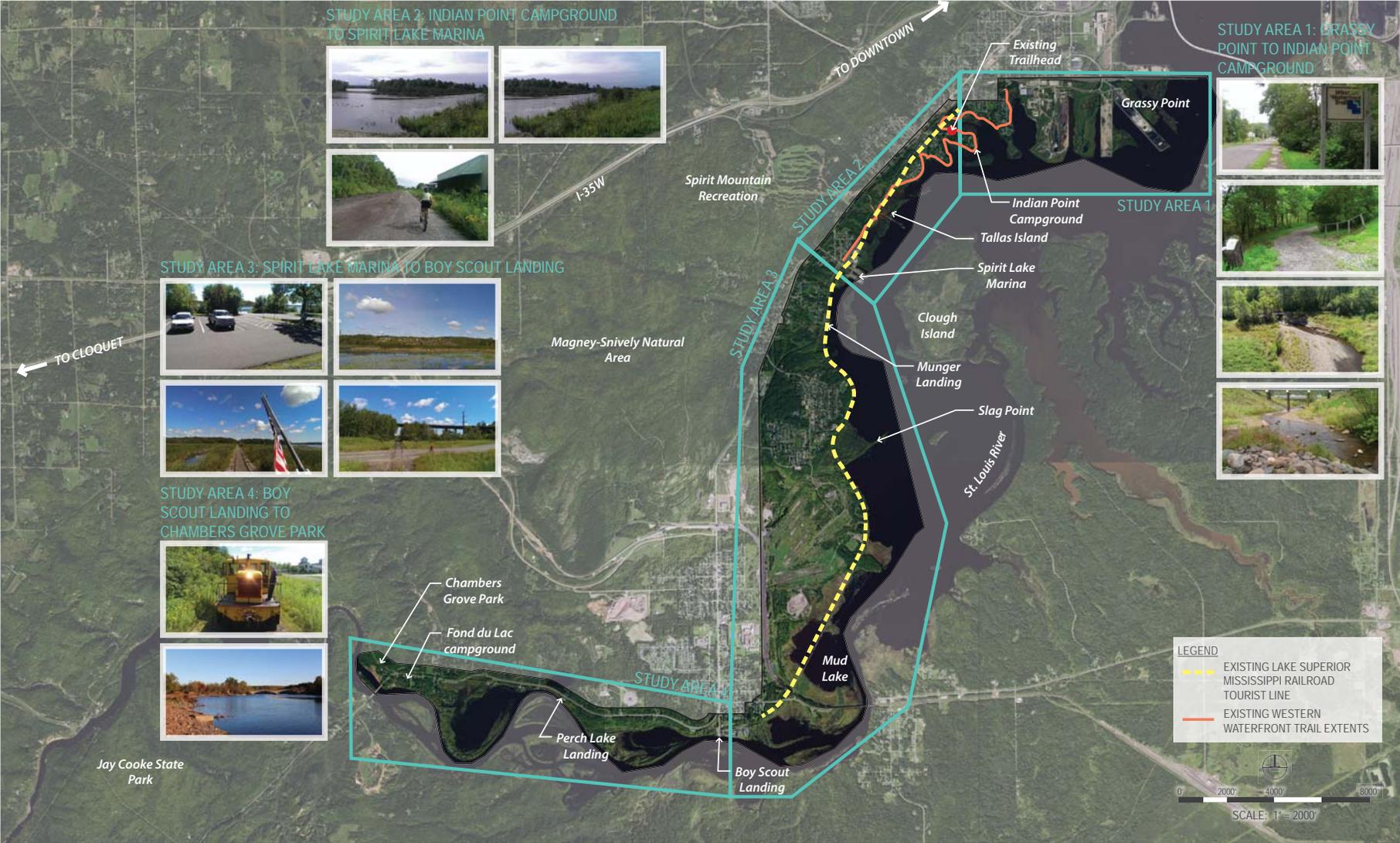
### Promote Economic Development

- Recognize opportunities and encourage future development by connecting other regional areas of interest, neighborhoods, and commercial districts.



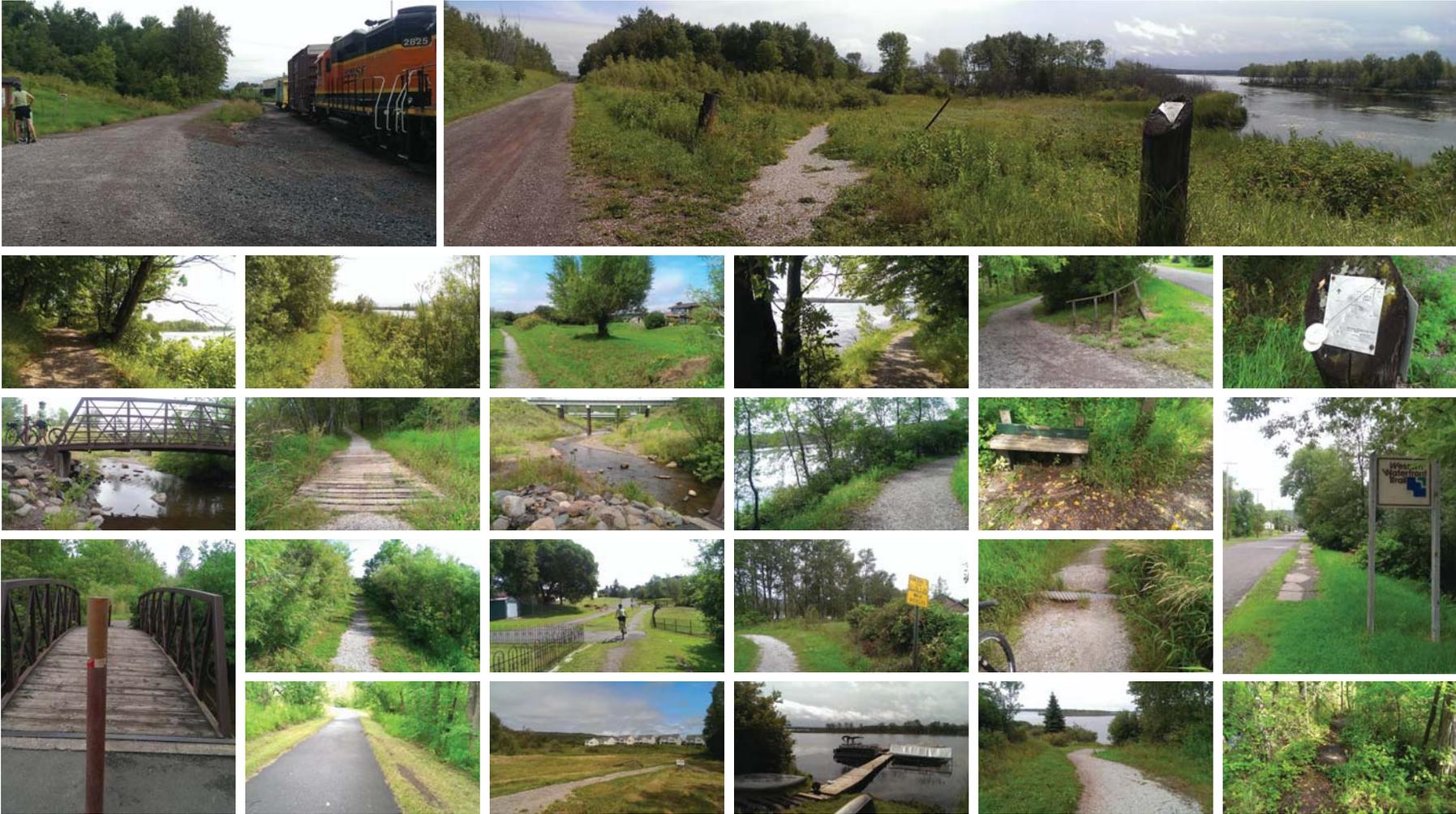
# EXISTING CONDITIONS & STUDY AREAS

## Overall Site Map



# EXISTING CONDITIONS

## Current Extents



# PLANNING FOR INTERPRETATION

An Overview of the Rich Cultural and Natural Heritage Along the St. Louis River Corridor





# ST. LOUIS RIVER CORRIDOR HISTORY

## A Cultural, Historical, & Ecological Timeline

Fond du Lac Band of Lake Superior Chippewa solely inhabited the shores of the St. Louis River prior to the 1600's  
1600



Image: Duluth Public Library

European contact first reported when Etienne Brule meets with the Chippewa at Sault Ste. Marie; French traders and Chippewa people establish positive alliance  
1622

French and Indian War/Seven Years' War ends, ceding French territory to Great Britain and bringing the Great Lakes region under British rule, creating greater hardship for the Chippewa people  
1763



Image: historyinanehour.com



Image: reproduction of James Otto Lewis 1826 painting, Duluth Public Library

American Fur Company organized, establishes first commercial fishery at Fond du Lac trading post in 1817  
1808



Image: University of MN Duluth, Hudson Bay Trading Co.

LaPointe Treaty opens the land for European settlement and establishes the Fond du Lac Reservation  
1854

Locks open at Sault Ste. Marie, making it possible for large ships to sail between Lake Superior and Lake Huron, and allowing for the export of iron ore, lumber and grain  
1855

Image: Lake Superior & Mississippi Railroad



MN Harbor Improvement Company dredges first shipping canal in the St. Louis River Estuary  
1872

Logging industry operations are concentrated at Jay Cooke State Park; by 1894 there are at least 15 sawmills along the St. Louis River  
1894

US Steel completes construction of mill on MN side of St. Louis River; Morgan Park community is established to house steel and cement plant workers  
1915

Image: LHB



Image: LS&M Railroad



1861 Construction on 154 miles of track of the Lake Superior and Mississippi Railroad (LS&M) begins

1870 First train arrives in Duluth from St. Paul

1877 LS&M is reorganized as the St. Paul and Duluth Railroad, and later folded into the Northern Pacific Railway



Image: Unknown



Image: trainworldcity.webs.com

1930'S Northern section of what was originally the LS&M is moved and no longer carries passengers

1979 Western Waterfront Trail originally planned, designed to be 9 miles long. The first two segments, totaling close to five miles, are built as an 8' wide gravel corridor

1980 Present day Lake Superior and Mississippi Railroad tourist train started by volunteers from the Lake Superior Transportation Club, using original track along the St. Louis River

# INTERPRETIVE PLAN Signage

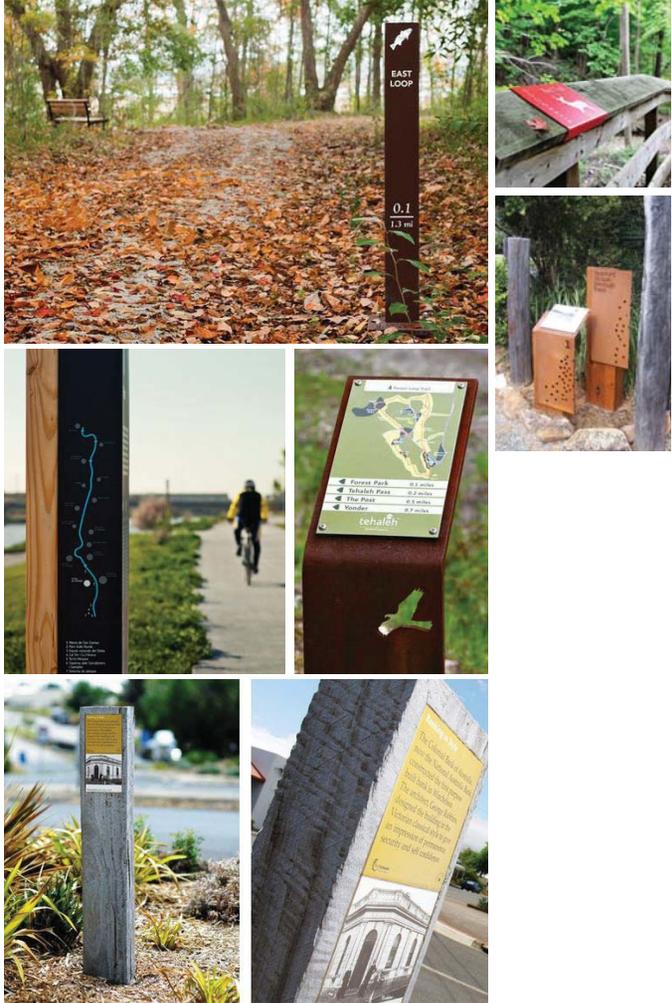
## LARGE, LANDMARK SIGNS



## MEDIUM, INFORMATIONAL SIGNS



## SMALL, PEDESTRIAN-LEVEL SIGNS



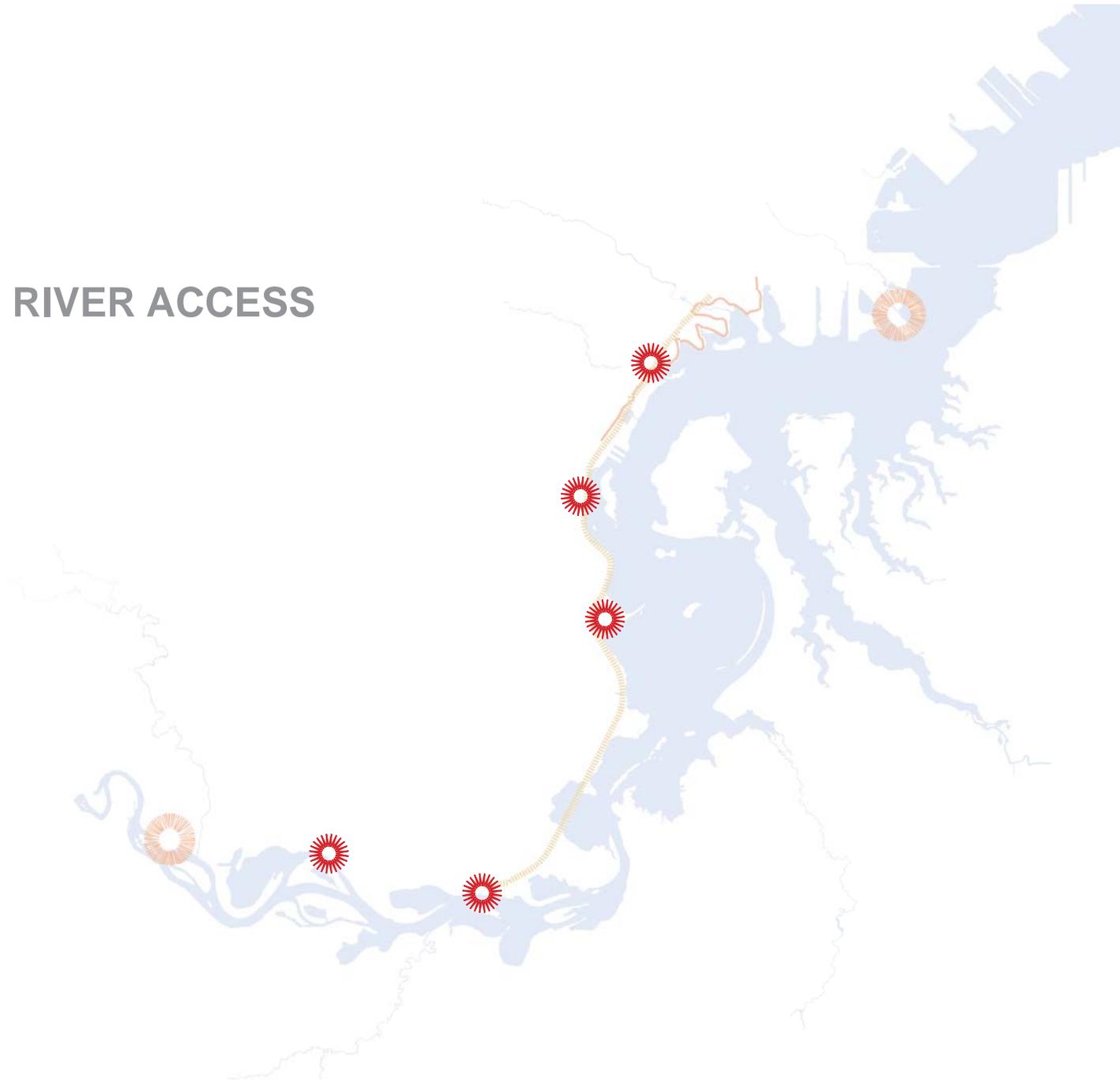
# PLANNING FOR ST. LOUIS RIVER ACCESS

## New Sites:

- Lower Spirit*
- Slag Point*

## Existing Sites:

- Munger Landing*
- Boy Scout Landing*
- Perch Lake*



# NON-MOTORIZED PUT-IN SITES

## Best Practices\*

*National Park Service Report, 'Long Lasting Launches,' 2004*

### Accessible

- Accessible to all paddlers: slopes should not exceed 8.33%
- Between 9" and 2' from highest expected water level, at least 5' wide, preferably 6'-12'; at least 25' in length
- Handrails or other support structures are helpful
- Located in areas without heavy flow, erosion, exposure to elements, heavy boat traffic or fragile riparian habitats

### Best-suited Launch Type

- Choose most suitable type of launch for water body, climate and ecological factors

### Cost Effective and Durable

- Existing natural sites are preferable, though not always durable and require reinforcement over time

### Environmentally Friendly

- Low impact design and non-toxic materials protect water quality, vegetation, and riparian habitats



## Launch Types\*

*National Park Service Report, 'Long Lasting Launches,' 2004*

### Simple Launches

- Natural and existing shorelines, beaches and simple ramps

### Floating Launches

- Adjust to fluctuating water, are easily removable, provide steady surface

### Pipe and Pile Launches

- Can span marshes or shallow areas to enable launching in deep enough water

### Cantilever Launches

- Anchored to the shoreline and extend out over the water, appearing to float - can be partially removable

### Stairs

- Provide access along steep shorelines, and may be used in areas where water levels change dramatically

### Concrete Launches: Ramps, Stairs, and Mats

- Can be used as launches themselves or in combination with other launches

### Concrete Mats

- Most practical for sites that are shared with motorized boats

### Concrete Strips

- Direct heavy flow or sediment loads away from launch areas

# ACCESSIBLE BOAT LAUNCH + WATER ACCESS

## Design Considerations\*

*National Park Service Report, 'Long Lasting Launches,' 2004*

### Provide Access Route

- Surface, grade, width and cross slope need to be accessible (not to exceed 5% for ADA, not to exceed 8.33% for ABA), and as even and level as possible without gaps or interruptions

- Route clearly marked

- 5' minimum width

### Level and stable landing/loading area

- There should be an area adjacent to the loading area that is stable, at least 60"x60"

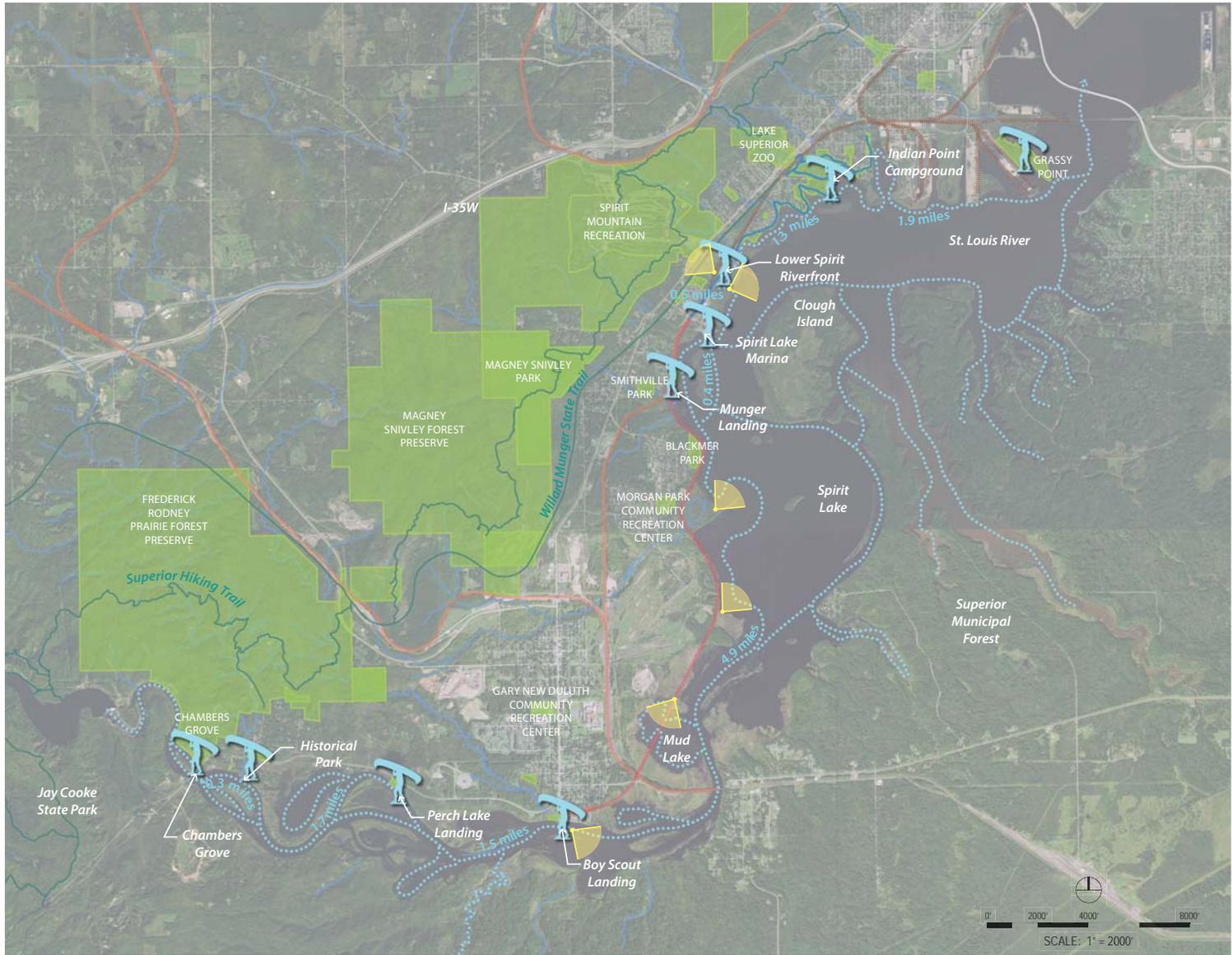
- Can be anywhere adjacent to loading area, including in water up to 12" deep

### Transfer assistance

- Transfer step
- Transfer board
- Overhead handles/grab bars
- Non-slip surface textures



# ANALYSIS: WATER ACCESS, TRAILS + GREEN SPACE



## LEGEND

- PARKLAND
- WATER TRAIL ACCESS POINT
- WATER TRAIL
- STREAMS
- BNSF LINE
- LSMR LINE
- DMIR LINE
- EXISTING TRAIL
- EXISTING WESTERN WATERFRONT TRAIL
- VIEWS TO POINTS OF INTEREST (SPIRIT LAKE, CLOUGH ISLAND, SPIRIT MOUNTAIN, US STEEL, ESTUARY BAYS)

# ST. LOUIS RIVER WATER TRAIL ACCESS POINTS

## Surrounding Amenities



### Grassy Point

- Shore fishing
- Canoeing and kayaking
- Birding
- Scenic overlook
- Hiking (trailhead)
- Picnic



### Spirit Lake Marina (private)

- Boat & bike rentals
- Boat fishing
- Birding
- Concessions
- Hiking & mountain biking
- LS&M Railroad excursions
- RV camping
- Private restrooms



### Indian Point

- Boat rental for canoeing & kayaking
- Shore fishing
- Hiking & Mountain biking (trailhead)
- Camping + concessions
- Restrooms
- Picnic Area
- Wild rice harvesting



### Munger Landing

- Canoeing, kayaking & motorized boating
- Shore fishing
- Birding
- Duck hunting
- Wild rice harvesting
- LS&M Railroad excursion
- Portable toilets



### Lower Spirit

- Beginner canoeing & kayaking in sheltered bay
- Birding
- Scenic Overlook
- Hiking & mountain biking
- LS&M Railroad excursion



### Boy Scout Landing

- Canoeing, kayaking, & motorized boating
- Shore fishing
- Wild rice harvesting
- Historical interpretation
- Camping
- LS&M Railroad Excursion
- Portable Toilets

# ST. LOUIS RIVER WATER TRAIL ACCESS POINTS

## Surrounding Amenities



### Perch Lake

- Canoeing & Kayaking
- Shore fishing
- Hiking
- Birding
- Wild rice harvesting
- Duck hunting

### Mileage in between:

- Grassy Point to Indian Point: 1.9 miles
- Indian Point to Lower Spirit: 1.3 miles
- Lower Spirit to Spirit Lake Marina: 0.5 miles
- Spirit Lake Marina to Munger Landing: 0.4 miles
- Munger Landing to Boy Scout Landing: 4.9 miles
- Boy Scout Landing to Perch Lake: 1.5 miles
- Perch Lake to Historical Park: 1.7 miles
- Historical Park to Chambers Grove: 0.3 miles



### Historical Park

- Canoeing and kayaking
- Shore fishing
- Birding
- Wild rice harvesting
- Historic interpretation



### Chambers Grove Park

- Canoeing & kayaking
- Shore fishing
- Hiking & mountain biking trailhead
- Playground
- Historic Interpretation
- Restrooms
- Picnic Pavilion, Event Arbor Overlook
- Camping

# EXISTING CONDITIONS: LOWER SPIRIT MOUNTAIN RIVERFRONT



View 1—Lower Spirit at Western Waterfront Trail



View 2—Lower Spirit parking area



View 3—Lower Spirit shoreline and pump house building

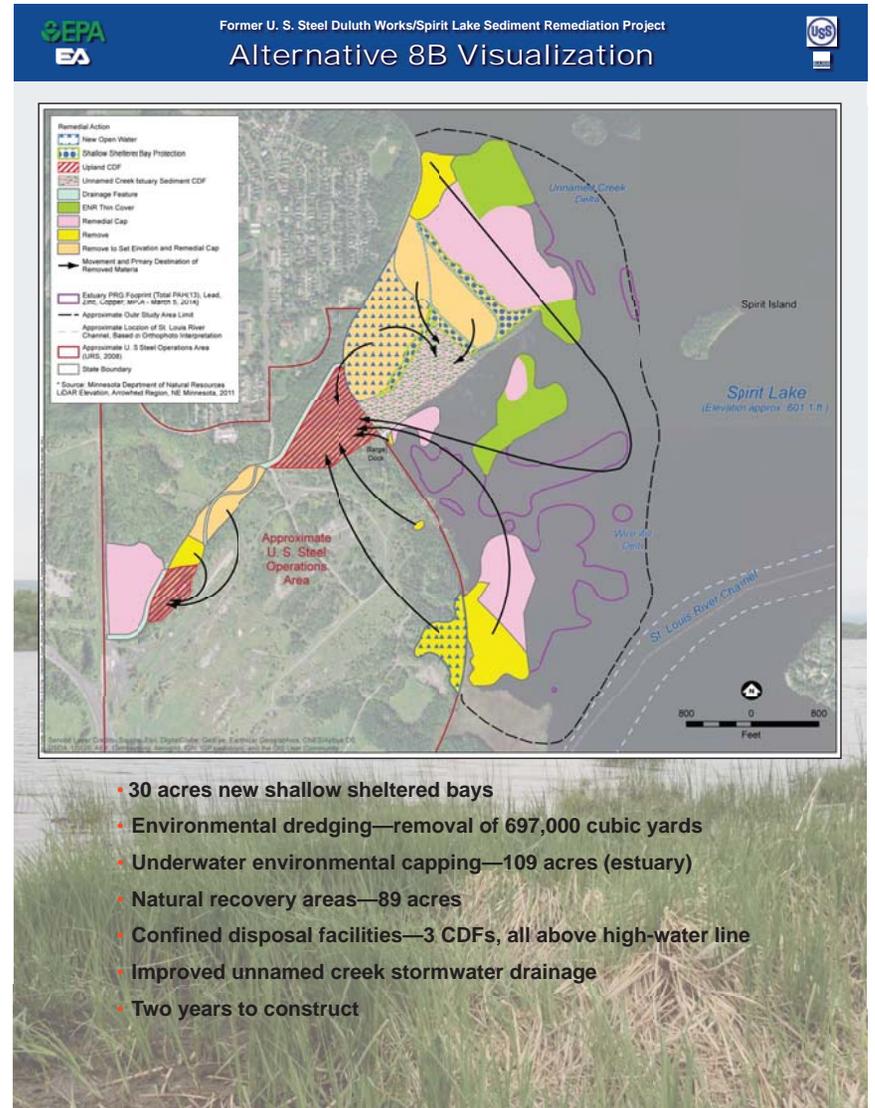
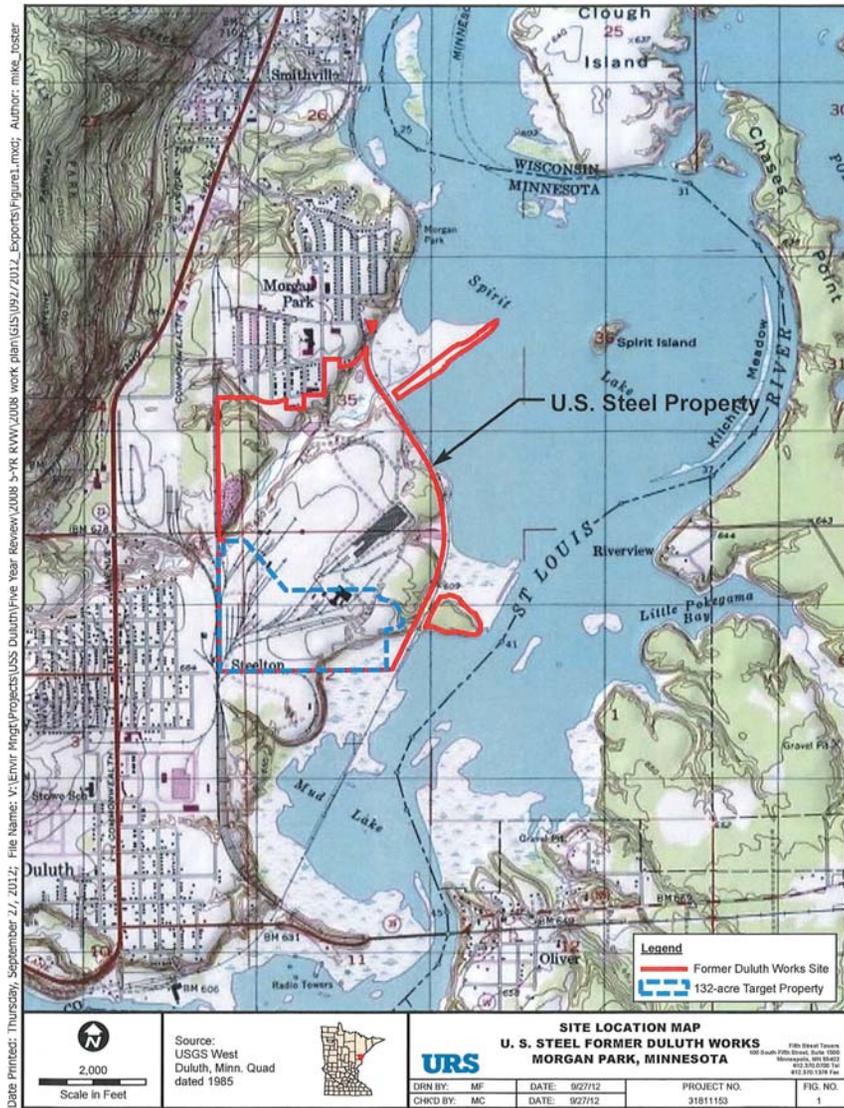


View 4—View to Tallas Island from lower Spirit

WESTERN WATERFRONT TRAIL & PARK MASTER PLAN Duluth, Minnesota

ST. LOUIS RIVER CORRIDOR

# EXISTING CONDITIONS OF CLEAN-UP AREA



# EXISTING CONDITIONS: MUNGER LANDING

## DNR Comments

- Large debris and washed up docks need to be reset in spring due to unprotected winter conditions
- Biggest complaint is portable toilets
- 3 core functional upgrades to DNR-managed boat launches: ADA, AIS, stormwater



**LEGEND**

- FRESHWATER EMERGENT WETLAND
- FRESHWATER FORESTED/SHRUB WETLAND
- FRESHWATER POND
- LAKE
- RIVERINE
- CITY OF DULUTH PROPERTY
- PARCEL LINE



1 - View east



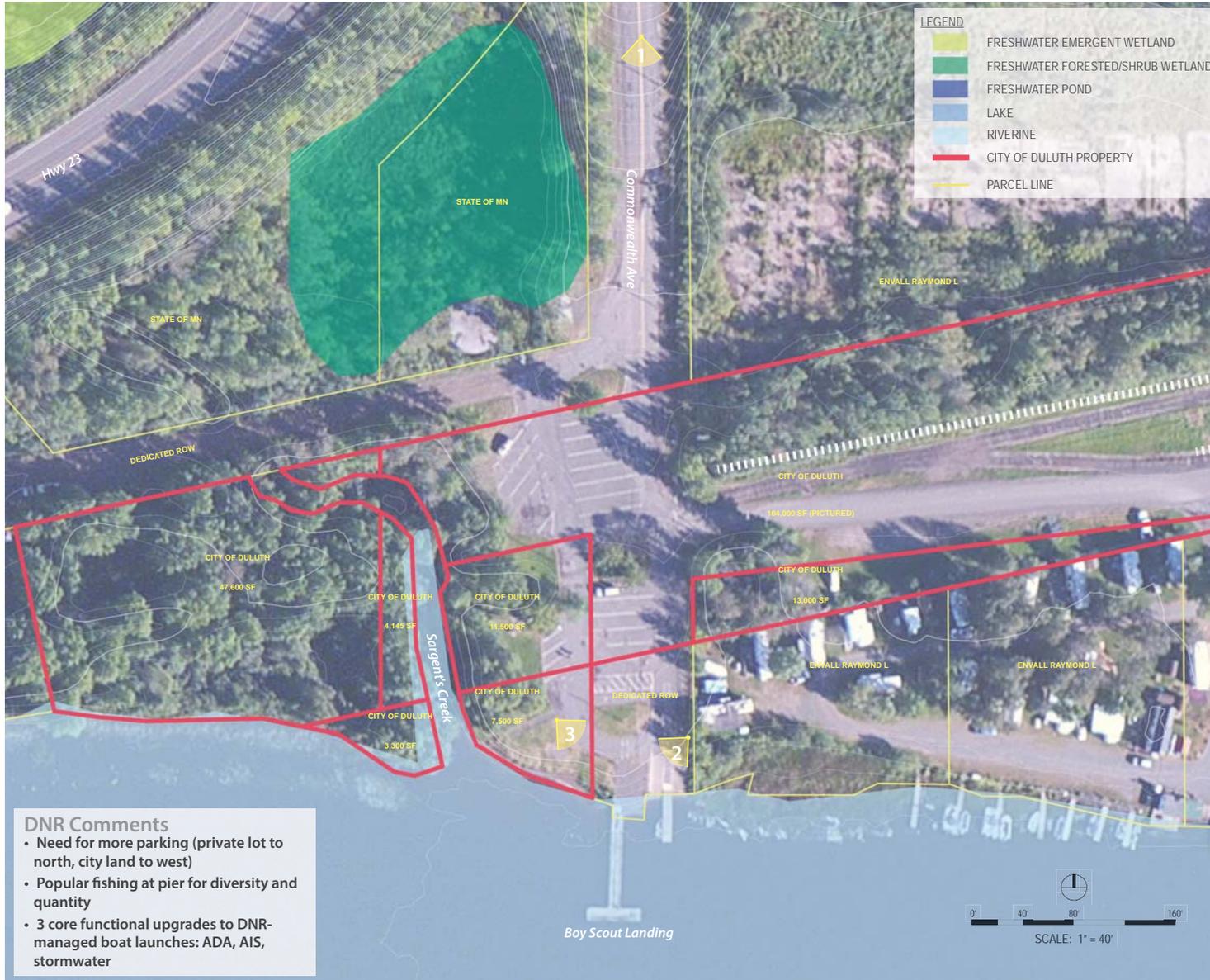
2 - View northwest of railroad corridor



3 - View of lower lot

Munger Landing Site Statistics	
2.7 acres City-owned	2 clean + drain stations
2 boat ramps	1 fishing pier
1 boarding dock	Walking distance to neighborhood, park, + bus line
Paved parking for 11 car/trailers (upper lot)	Renovated in 2003 with parking expansion
Paved parking for 14 car/trailers (lower lot)	Facility operated by the MN DNR, maintained by City of Duluth
Paved parking for 2 accessible/4 cars (lower lot)	

# EXISTING CONDITIONS: BOY SCOUT LANDING



1 - View south



2 - View of boat ramp



3 - View of temporary restroom facilities

Boy Scout Landing Site Statistics	
4.4 acres City-owned	2 clean + drain stations
2 boat ramps	1 fishing pier
2 boarding docks	Walking distance to neighborhood, park, + bus line
Paved parking for 20 car/trailers (2 accessible)	Renovated in 2012 to move pier/reduce parking
2 portable toilets	Facility operated by the MN DNR, maintained by City of Duluth
Adjacent campground	

# EXISTING CONDITIONS: PERCH LAKE



1 - View of parking area



2 - View of stair



3 - View of water's edge

Perch Lake Site Statistics	
2.22 acres City-owned	Originally built in _____
Gravel parking for 10?	Facility operated by the MN DNR, maintained by City of Duluth
Stair access (27 risers) to water's edge	
Small shoreline access with bench	
Adjacent informal trail	
Walking distance to neighborhood, park, + bus line	



# PRECEDENTS

## Rail to Trail

### Vermont's Island Line

*Vermont*

- 14 miles, 3.5 of which are a causeway over water
- Asphalt and gravel
- Biking, inline skating, fishing, walking, x-country skiing



### Elroy Sparta State Bike Trail

*Wisconsin*

- 32 miles
- Crushed stone
- Hiking, jogging, x-country skiing, snowmobile,



### Utah's Historic Union Pacific Rail Trail State Park

*Utah*

- 28 miles
- Crushed stone and asphalt
- Hiking, biking, x-country skiing



### Kansas' Prairie Spirit Trail

*Kansas*

- 51 miles
- Compacted, crushed limestone
- Biking, hiking, x-country skiing



# PRECEDENTS

## Rail and Trail

**Heritage Rail Trail County Park and Maryland's Torrey C. Brown Rail Trail**

*Maryland and Pennsylvania*

- 44.4 miles combined
- Crushed stone and dirt
- Walking, biking, horseback riding, x-country skiing



**Great Allegheny Passage**

*Maryland and Pennsylvania*

- 150 miles
- Asphalt, crushed limestone
- Biking, horseback riding, skiing, fishing, walking



**Santa Fe Rail Trail**

*New Mexico*

- 17 miles
- Asphalt and dirt
- Horseback riding, mountain biking, walking



**Astoria River Walk**

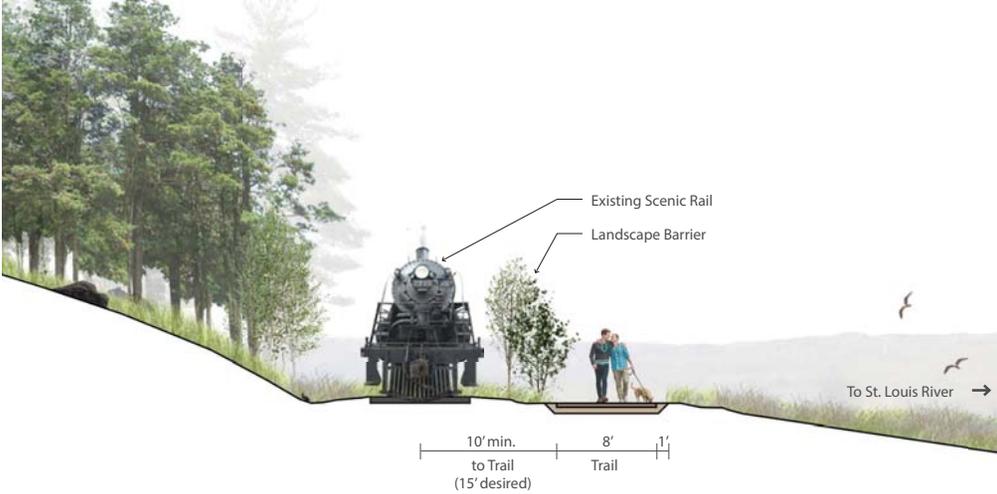
*Oregon*

- 17 miles
- Asphalt, dirt and boardwalk
- Horseback riding, mountain biking, walking

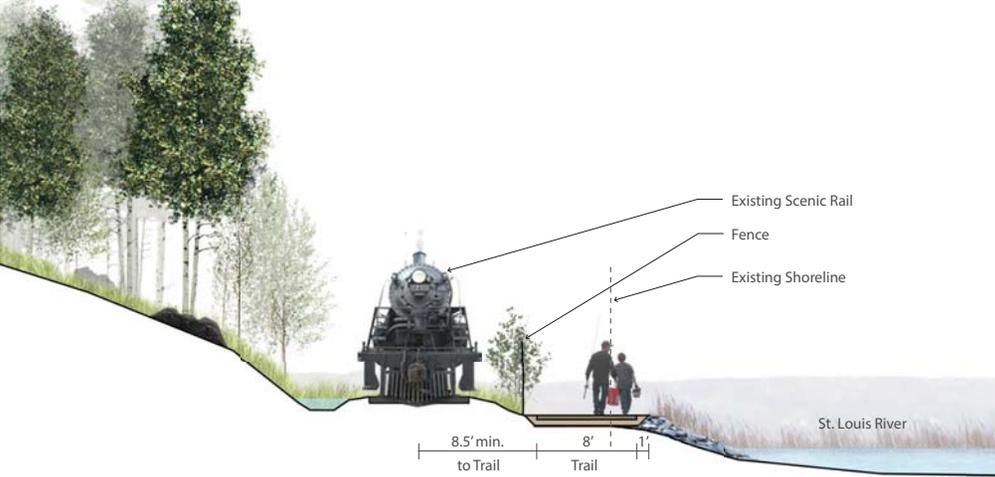


# TRAIL TYPES

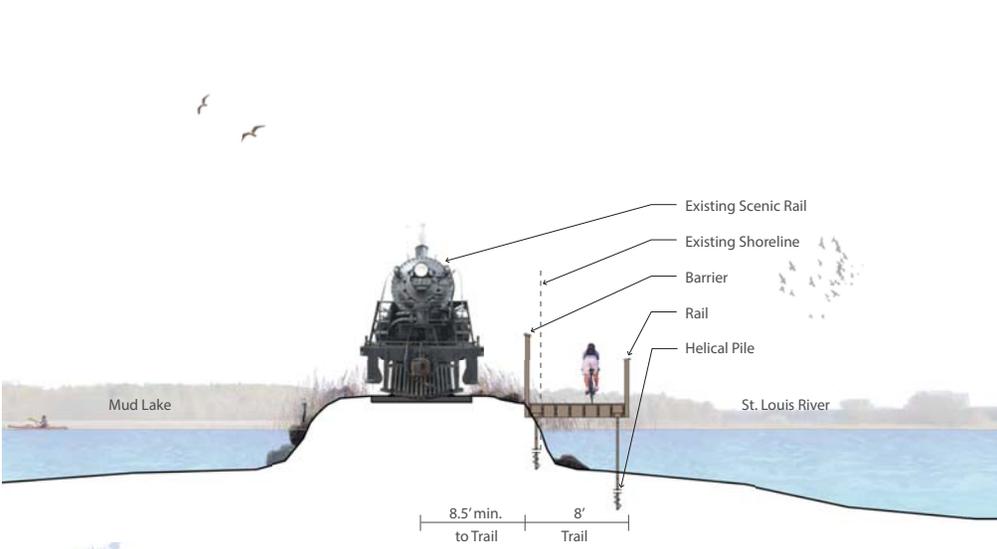
TRADITIONAL – SECTION AT INLAND ROUTE



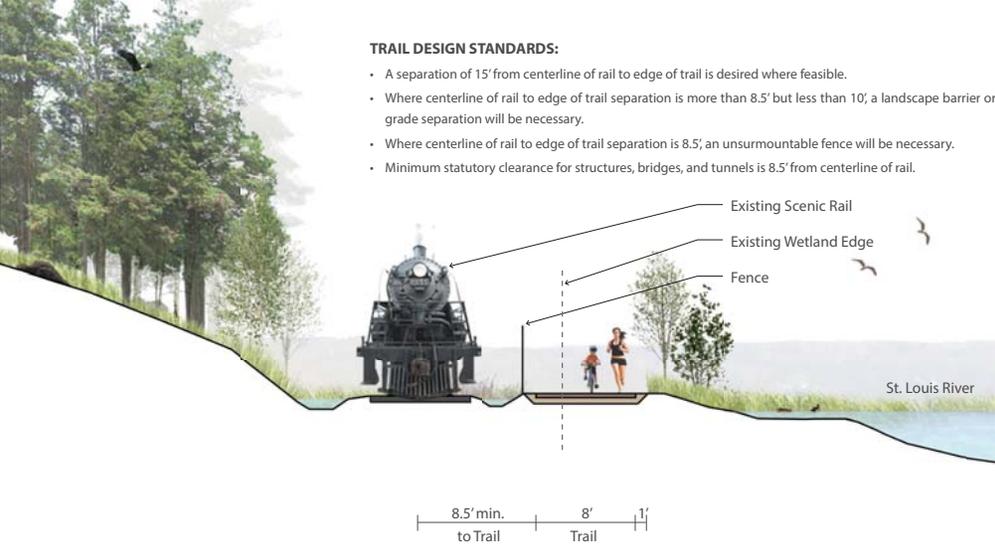
TIGHT TO SHORELINE EMBANKMENT – SECTION AT BLACKMERE PARK



TIGHT TO SHORELINE EMBANKMENT – SECTION AT MUD LAKE CAUSEWAY

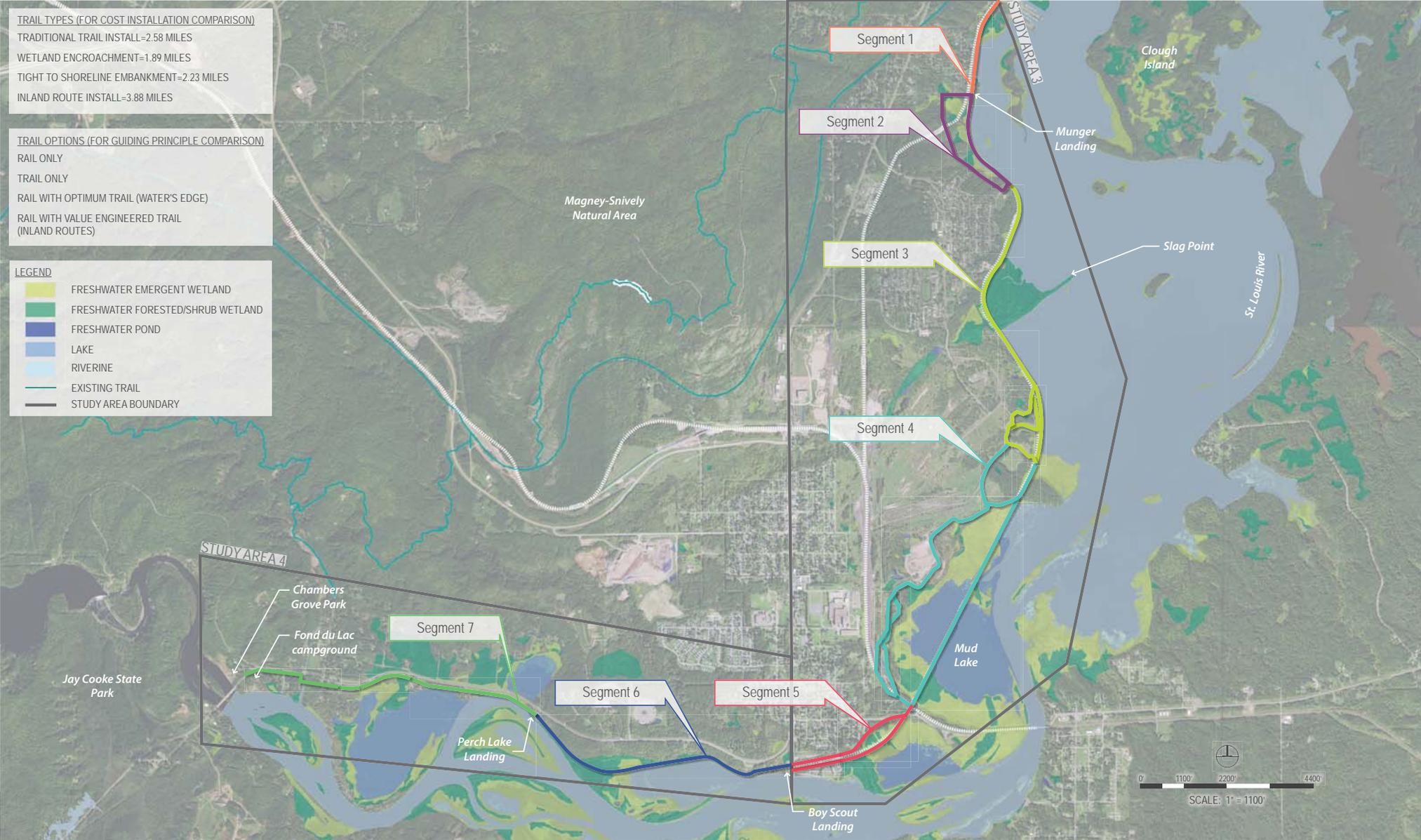


WETLAND ENCROACHMENT – SECTION AT EAST McCUEN ST



- TRAIL DESIGN STANDARDS:**
- A separation of 15' from centerline of rail to edge of trail is desired where feasible.
  - Where centerline of rail to edge of trail separation is more than 8.5' but less than 10', a landscape barrier or grade separation will be necessary.
  - Where centerline of rail to edge of trail separation is 8.5', an unsurmountable fence will be necessary.
  - Minimum statutory clearance for structures, bridges, and tunnels is 8.5' from centerline of rail.

# OVERALL TRAIL ALIGNMENT ALTERNATIVES



WESTERN WATERFRONT TRAIL & PARK MASTER PLAN Duluth, Minnesota

ST. LOUIS RIVER CORRIDOR

# TRAIL EXTENSION SEGMENT 1: SPIRIT LAKE MARINA TO MUNGER LANDING

## Traditional Trail Install (765 LF)



## Wetland Encroachment Trail Install (920 LF)



## Tight to Shoreline Embankment Trail Install (800 LF)



## Drainage Crossings (2 Total) \*



Total Waterfront Distance Segment 1: 2485 LF (.47 mile)

WESTERN WATERFRONT TRAIL & PARK MASTER PLAN Duluth, Minnesota

ST. LOUIS RIVER CORRIDOR



# COST SUMMARY

## WESTERN WATERFRONT TRAIL EXTENSION COMPARISON SUMMARY

Date: 11/15/2016  
Project No: 150625

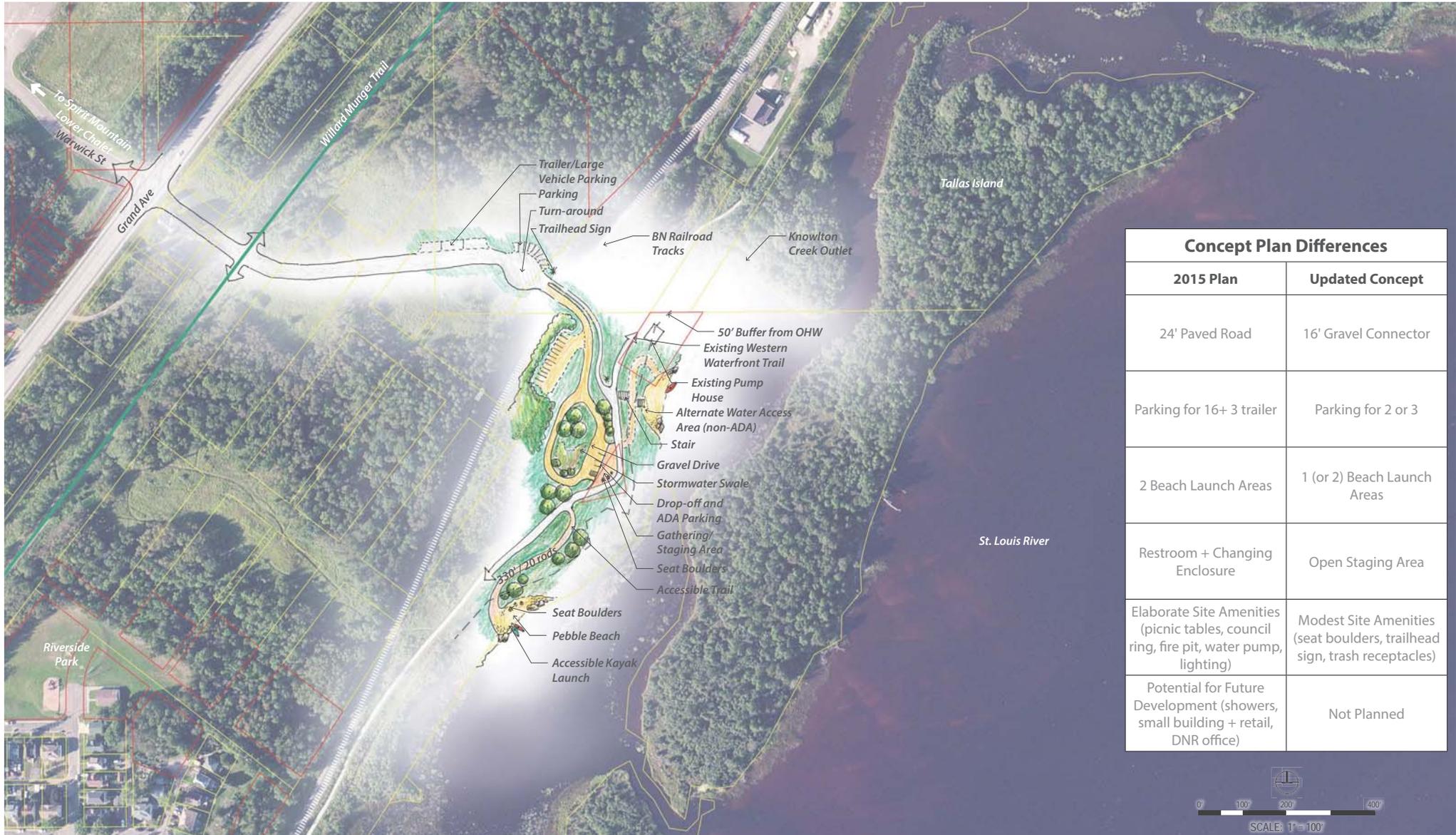
TRAIL SEGMENT	RAIL ONLY	TRAIL ONLY	RAIL WITH OPTIMUM TRAIL	RAIL WITH VALUE ENGINEERED TRAIL
Segment 1: Spirit Lake Marina to Munger Landing	\$0	\$385,080	\$1,611,480	\$1,611,480
Segment 2: Munger Landing to EPA/US Steel Clean-up	\$0	\$377,580	\$1,225,860	\$1,020,600
Segment 3: EPA/US Steel Clean-up to Spirit Point	\$0	\$1,162,800	\$2,475,000	\$3,031,500
Segment 4: Spirit Point to East McCuen Street	\$0	\$1,152,612	\$14,011,926	\$3,604,655
Segment 5: East McCuen Street to Boy Scout Landing	\$0	\$509,280	\$940,410	\$1,166,400
Segment 6: Boy Scout Landing to Perch Lake Access	\$0	\$864,000	\$864,000	\$864,000
Segment 7: Perch Lake Access to Chambers Grove	\$0	\$921,300	\$921,300	\$921,300
<b>CONSTRUCTION TOTAL</b>	<b>\$0</b>	<b>\$5,372,652</b>	<b>\$22,049,976</b>	<b>\$12,219,935</b>

### NOTES:

1. LIN FT prices account for mobilization, clearing and grubbing, erosion and sediment control, landscaping and minor drainage modifications.
2. Contingencies are included as provisions to cover unforeseen circumstances that would affect the overall construction costs.
3. Estimates do not include costs for survey, engineering design, environmental analysis, permitting, or construction administration/site observation.
4. Topographic survey and geotechnical information were not available at the time of this estimate.
5. Track removal includes removal and appropriate disposal of metal rail, wood ties, and preparation of remaining ballast as trail sub-base.
6. Trail install costs include fencing to provide the necessary safety barrier between the trail and the rail as well as between the trail and steep embankments.
7. Rail with optimum trail option assumes trail will be constructed between existing rail and shoreline.
8. Sensitive area impacts refers to impacts to wetlands or river bank. These areas will require exhaustive permitting and may require mitigation, special plantings, slope stabilization, etc.
9. Rail with value engineered trail option assumes trail will go inland in some locations to avoid costly construction where rail is tight to shoreline or in wetlands.
10. Significant drainage crossings refer to culverts or pedestrian bridges to provide crossing of drainage ways. Minor drainage modifications are included in LIN FT unit prices.

TRAIL TYPES	COSTS (PER LIN FT)
Traditional on-existing rail bed	\$100
Traditional next to existing rail	\$180
Inland route on cleared alignment	\$225
Inland route on forested alignment	\$270
Wetland encroachment	\$275
Tight to shoreline fill slope	\$375
Tight to shoreline elevated structure	\$2,000
Causeway widening	\$2,000
<b>Trail Salvage Income (lump sum)</b>	<b>\$300,000</b>

# LOWER SPIRIT MOUNTAIN CONCEPT



Concept Plan Differences	
2015 Plan	Updated Concept
24' Paved Road	16' Gravel Connector
Parking for 16+ 3 trailer	Parking for 2 or 3
2 Beach Launch Areas	1 (or 2) Beach Launch Areas
Restroom + Changing Enclosure	Open Staging Area
Elaborate Site Amenities (picnic tables, council ring, fire pit, water pump, lighting)	Modest Site Amenities (seat boulders, trailhead sign, trash receptacles)
Potential for Future Development (showers, small building + retail, DNR office)	Not Planned

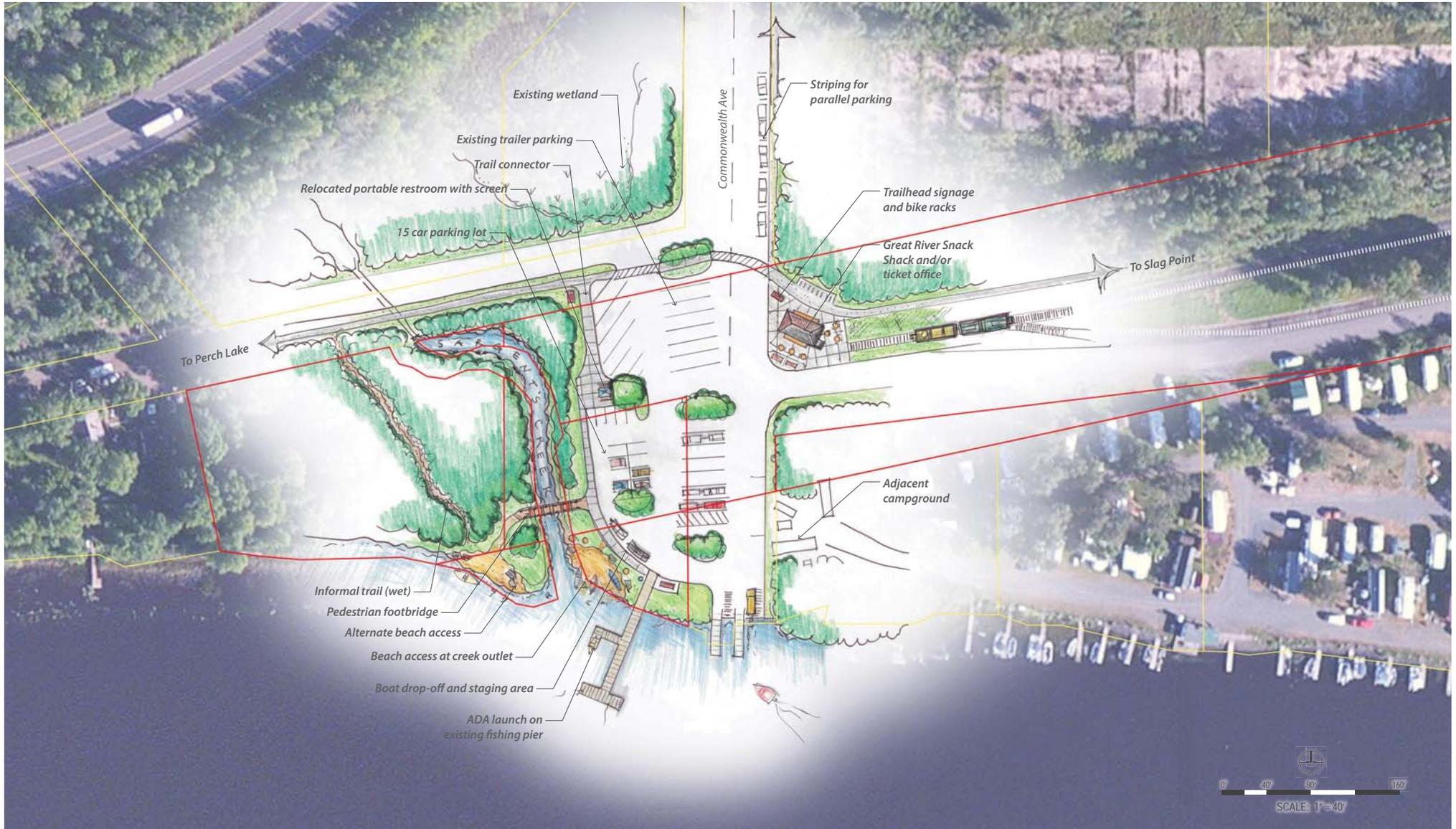
WESTERN WATERFRONT TRAIL & PARK MASTER PLAN Duluth, Minnesota

ST. LOUIS RIVER CORRIDOR

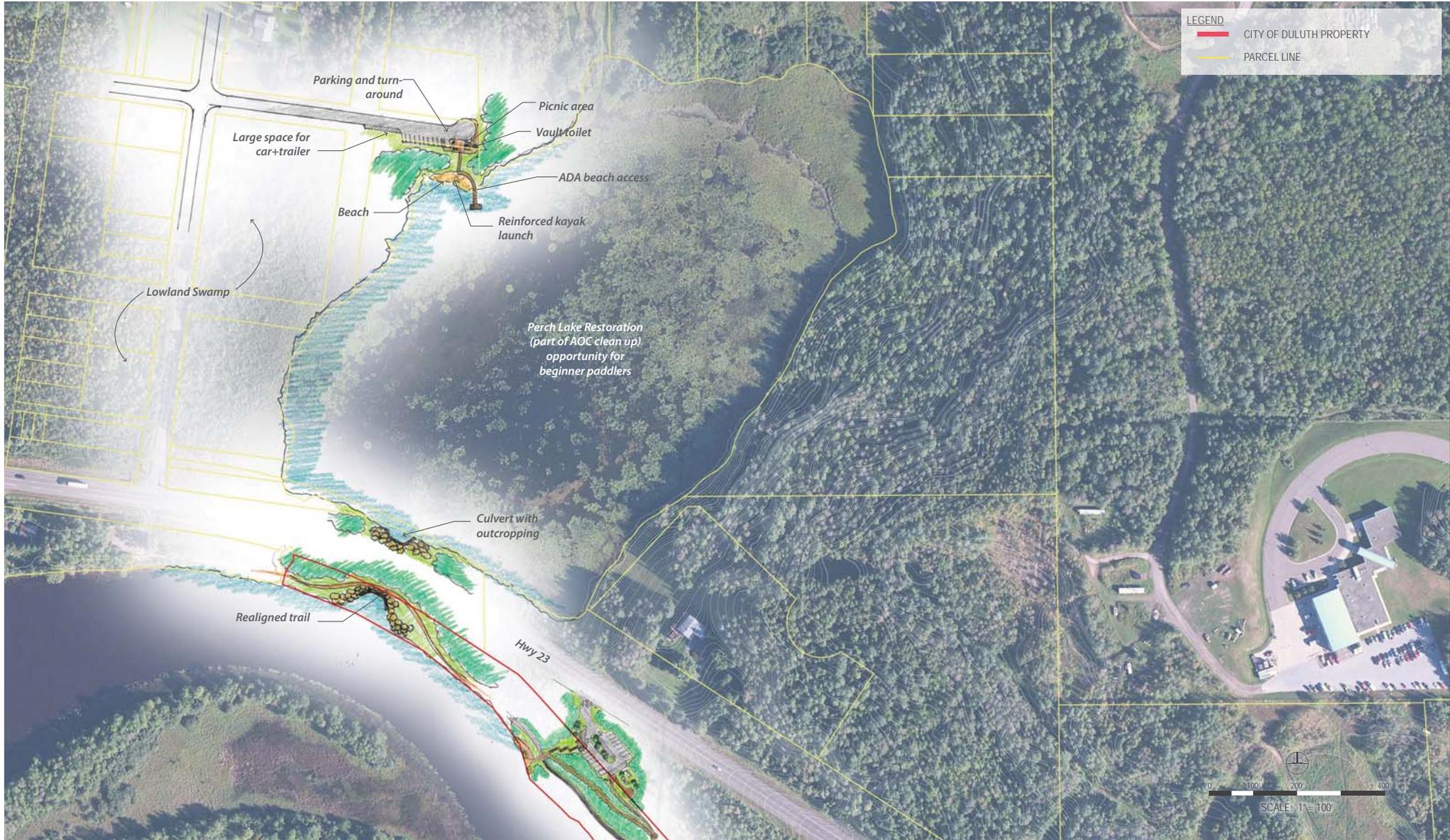
# MUNGER LANDING CONCEPT



# BOY SCOUT LANDING CONCEPT



# PERCH LAKE CONCEPT



# PERCH LAKE CONCEPT



# SLAG POINT CONCEPT



# THANK YOU

- Please fill out a comment card before you leave!
- Please check out the City Parks website at <http://www.duluthmn.gov/parks> and take the online survey!

